Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Actions to Accelerate Adoption and	)	GN Docket No. 16-46
Accessibility of Broadband-Enabled Healthcare	)	
Solutions and Advanced Technologies	)	

COMMENTS OF SES S.A. AND O3B LIMITED

SES S.A. ("SES") and its subsidiary O3b Limited ("O3b") (together, "the Companies") welcome the opportunity to submit these comments in response to the Commission's Public Notice regarding actions to accelerate adoption and accessibility of broadband-enabled health care solutions and advanced technologies ("Broadband Health Technology Public Notice").[1]

I. BACKGROUND

SES, one of the world's largest commercial communications satellite operators, is uniquely positioned to comment on the Broadband Health Technology Public Notice with facilities that include both geostationary ("GSO") and non-geostationary ("NGSO") satellite fleets. SES entities operate more than 50 GSO satellites able to reach 99% of the world's population, many of them pursuant to Commission authority. These spacecraft serve broadcasters, direct-to-home ("DTH") service providers, and corporate and government

[1] *See generally FCC Seeks Comment and Data on Actions to Accelerate Adoption and Accessibility of Broadband-Enabled Health Care Solutions and Advanced Technologies,* Public Notice, GN Docket No. 16-46, FCC 17-46.

customers worldwide with offerings that include video and audio content distribution, DTH, private networks, broadband, satellite news gathering, aeronautical and maritime services, and mobile backhaul.

SES subsidiary, O3b, provides connectivity via its Medium Earth Orbit ("MEO") satellite network. O3b delivers the performance of fiber in places where terrestrial networks are limited and makes affordable broadband connectivity possible for billions of consumers and businesses in nearly 180 countries. Since O3b satellites are at the MEO altitude of 8062 km, users on O3b's system typically experience round trip latency of less than 150 milliseconds, approximately one quarter the latency of geostationary orbit satellites. O3b's MEO-enabled satellites provide low latency, high throughput connectivity at speeds that support 4G/LTE applications like cloud computing, allowing for fast, flexible, and affordable solutions to telemedicine and e-health challenges. The Companies use spectrum in the C, Ku, and Ka bands to support a range of e-health applications.

II. SATELLITE COMMUNICATIONS SERVE A KEY ROLE IN ADVANCING BROADBAND-ENABLED HEALTH CARE SOLUTIONS IN UNDERSERVED AND UNSERVED COMMUNITIES.

The Companies' satellite capacity provides fast and affordable broadband connectivity to deliver e-health and telemedicine services in hard to reach areas on land, in the air, and at sea. Satellite communications are vital in providing connectivity to underserved and unserved communities in remote and rural areas, where terrestrial services are limited or nonexistent. The Companies' satellite e-health solutions range from remote video conferencing and medical data recording to providing vital communications for time sensitive emergency relief efforts and military missions.

For example, O3b successfully provided its MEO satellite connectivity to the USS Fort Worth combat ship for a short-term operation.[2] During the operation, a crewman became ill while the ship was traversing the Pacific Ocean. The USS Fort Worth contacted doctors on shore who evaluated and treated the patient using a real-time video conference application via O3b's high throughput, low latency connection. Satellite connectivity proved to be vital in providing medical attention at sea.

The Companies have also partnered with businesses, other governments and international organizations to develop innovative satellite broadband enabled-solutions to e-health challenges. As another example, SES collaborated with the Luxembourg government to develop SATMED, an IT enabled cloud infrastructure providing fast and reliable connectivity globally which also facilitates data exchanges between professionals and medical frameworks.[3] SATMED covers a full spectrum of e-health including e-learning, e-care and e-surveillance in one single access platform. SATMED was deployed for the first time during the Ebola outbreak in West Africa in 2014. SES Techcom services brought internet access to the outpatient clinic of a hospital in Sierra Leone that was geographically isolated with no access to higher level secondary care.[4] The first deployment of SATMED in Benin provided a remote consultation and monitoring tool to establish effective childbirth healthcare communications between a maternity hospital and two

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[2] O3b Limited, *O3b Network Successfully Participates in U.S. 7th Fleet Trident Warrior Exercises, (*June 22, 2015), http://www.o3bnetworks.com/o3b-networks-successfully-participates-in-u-s-7th-fleet-trident-warrior-2015-exercises/.

[3] SES S.A., *SES Partners for E-Medicine Platform SATMED,* (May 27, 2014), https://www.satmed.com/news-2014-05-27.php.

[4] SES S.A., *SATMED Wins Changing Lives Award at VSAT Global event in London*, (September 20, 2016), https://www.ses.com/blog/satmed-wins-changing-lives-award-vsat-global-event-londonhttps://www.ses.com/blog/satmed-wins-changing-lives-award-vsat-global-event-london.

other hospitals in the region.[5] This platform provides the only effective communication link between the three units in Benin because the land routes are often inaccessible due to flooding during the rainy season. In addition to Sierra Leone and Benin, SATMED has been deployed in a child hospital in Niger, a remote island in the Philippines, and three floating hospitals in Bangladesh.

SES and O3b's unique joint MEO and GEO constellation allows for the adoption of accelerated and advanced satellite-broadband enabled health care solutions. SES's new government product, the Rapid Response Vehicle (RRV), is the world's first mobile platform to offer collaborative communications technologies over multiple orbits and frequencies, including Ku-, Ka-, and Military X- and Ka-bands across SES's GEO fleet and fiber-like Ka-band delivered over O3b's MEO constellation. This versatility enables the RRV to provide high-speed connectivity and global communications services tailored to a broad range of commercial, civil, humanitarian and defense missions around the world.[6] The RRV can deploy to areas lacking sufficient connectivity and quickly launch SATMED telemedicine service.

Future O3b MEO deployment will continue to offer innovative solutions to ensure e-health services can continue reaching underserved and unserved communities. In response to such a high market demand, the Companies have already requested authorization to launch additional satellites, including eight O3b MEO satellites in 2018 and 2019.[7] In 2021, SES will be adding to the O3b fleet with a new constellation of seven next-generation MEO satellites, also

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[5] SES S.A., *Health Platform in Benin to Improve Treatment of Infectious Tropical Disease*, (June 4, 2015), https://www.satmed.com/news-2015-06-04.php.

[6] SES S.A., *Rapid Response Vehicle - for Defence, Security and Humanitarian Missions*, (April 19, 2017), https://www.ses.com/newsroom/rapid-response-vehicle-defence-security-and-humanitarian-missions.

[7] O3b Limited, Call Sign S2935, File Nos. SAT-MOD-20160624-00060; SAT-AMD-20161115-00116; & SAT-AMD-20170301-00026.

called O3b mPOWER.[8] The new system will be capable of delivering multiple terabits of throughput globally to connect exponentially more people, businesses, and communities all over the world. The O3b mPOWER constellation will also feature 30,000 fully-shapeable and steerable beams that can be shifted and switched in real time to align with new and ever-changing demands for e-health services that require high-capacity, low latency data services. The integration of O3b mPOWER with the SES fleet will enable global coverage and the ability to route application-optimized traffic over GEO, MEO, or terrestrial networks.

III. CONCLUSION

The Companies encourage the Commission to consider satellite solutions when forming policies to accelerate adoption and accessibility of broadband-enabled health care solutions. The Companies continue to play a key role in providing e-health and telemedicine solutions globally. The Companies offer these comments in support of the Broadband Health Technology Public Notice and remain readily available to assist in furthering the Commission's efforts.

Respectfully submitted,

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[8] See Press Release, SES Networks, *SES Opens New Era in Global Connectivity with O3b mPower*, (September 11, 2017), https://www.ses.com/press-release/ses-opens-new-era-global-connectivity-o3b-mpower.